

REMARKS

In accordance with the forgoing, new claims 105-124 have been added. Claims 1-59, 65-83 and 90-104 were withdrawn by the Examiner as being drawn to a nonelected species. Claims 60-64, 84-89 and 105-124 are pending and under consideration.

I. Rejections Under 35 USC § 102

Claims 60-64 and 84-88 stand rejected under 35 USC § 102(e) as being anticipated by U.S. Patent No. 6,430,439 to Wentkowski et al. ("Wentkowski"). The applicant respectfully asserts that the claims of the present invention are patentably distinguishable from Wentkowski and therefore the rejection is respectfully traversed.

The present invention is directed to determining conduction sequences propagating between chambers and defining various conductive disorders based on what would be an expected conduction sequence for a healthy heart. For example, as described at page 19, lines 6-30, in reference to FIG. 7 of the present application, and at page 21, line 22 to page 22, line 20, in reference to FIGS 9A and 9B, a histogram 200, 275 is formed that represent conductions occurring across a given pathway between chambers in differing pathways. From this data, the cardiologist and/or IMD can determine which pathway is the dominant pathway and the major direction of conductions in order to identify conductive disorders based on what would be an expected conduction sequence.

As a result, independent claim 60 sets forth sensing conduction sequences occurring from one ventricular chamber to another ventricular chamber, and determining which ventricular chamber the conduction sequence originated in and which ventricular chamber it propagated to. Similarly, independent claim 84 sets forth sensing means located in both ventricular chambers for sensing conduction sequences occurring from one ventricular chamber to another ventricular chamber, and means for determining which ventricular chamber the conduction sequence originated in and which ventricular chamber it propagated to.

The histograms in Wentkowski are generated by counting the number of senses and paces occurring through the right ventricular channel during each cardiac cycle for a specified period of time, and each counted sense or pace is assigned to an interval bin representing the R-R interval for that cardiac cycle. Event frequencies are then calculated based on the counts and expressed as a percentage of total cardiac cycles during the specified period of time. Wentkowski does not teach determining which chamber a conduction sequence originates in and which chamber the conduction sequence propagated to, as set forth in Independent claims 60 and 84 of the present invention. Therefore, independent claim 60 and claims 61-64 dependent thereon and independent claim 84 and claims 85-88 dependent thereon are patentably distinguishable from Wentkowski. Accordingly, it is respectfully requested that the rejection be withdrawn.

II. Rejections Under 35 USC § 103

Claim 89 stands rejected under 35 USC § 103(a) as being unpatentable over Wentkowski in view of U.S. Patent No. 6,146,586 to Mower. The rejection is respectfully traversed.

Mower teaches a method and apparatus for cyclic ventricular pacing starting at a rate just above the intrinsic atrial firing rate (overdrive pacing), followed by relaxation to a rate just below the intrinsic atrial firing rate (ventricular escape). Neither Wentkowski nor Mower, alone or in combination, teach or suggest determining which chamber a conduction sequence originates in and which chamber the conduction sequence propagated to, as set forth in Independent claim 84 of the present invention. Therefore, independent claim 84 and claim 89 dependent thereon are patentably distinguishable from Wentkowski and Mower. Accordingly, it is respectfully requested that the rejection be withdrawn.

III. New Claims Added

New claims 105-124 have been added. Support for new claims 105-124 31 can be found, for example, at page 19, line 6 to page 26, line 16. No new matter has been added. Entry and allowance of the new claims is respectfully requested.

IV. Conclusion

There being no further outstanding objections or rejections, it is submitted that the claims of the present application are in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned attorney to attend to these matters.

Respectfully submitted,

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Date


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